the present volume contains many polemical replies, notably in connection with the constitution and hardening of Portland cements. These hydraulic cements are considered to be basic lime salts of complex aluminosilicic acids containing coalesced hexite and pentite rings with calcium oxide side-chains replacing the hydroxyls of the hydrated silicon complexes, and occasionally containing alkali metals similarly attached to the aluminium hexite rings.

It is highly probable that the refractory oxides, silica, alumina, and their allies exist in highly complex molecules, and since among both inorganic and organic compounds there exists a certain tendency for the formation of five- and six-membered rings, it would probably be accepted by most chemists as a working hypothesis that such cyclic systems occur in the natural and artificial aluminosilicates and their derivatives, but it is open to doubt whether the authors do not greatly prejudice their case by attempting to extend this hypothesis to the explanation of the facts of coordination, radioactivity, and the constitution of organic substances, such as benzene, the artificial colouring matters, and the proteins.

(5) The appearance of this volume is a welcome indication that this monumental treatise on inorganic chemistry will be brought to completion in spite of the untimely death of its originator, the late Prof. Richard Abegg. There still remain for consideration, however, several important groups of elements, and the remaining volumes of the work are eagerly awaited by all interested in the systematic study of the chemical elements. A praiseworthy feature of the treatise so far as it has yet appeared is the thoroughness with which the compilers have accepted the periodic classification of the elements; this insures uniformity of arrangement, and renders the task of reference a very easy one. It is rarely necessary to turn to the indexes. The present volume is devoted to the halogens and manganese, the elements of the seventh periodic group. In the case of each element the opening section deals with the determination of its atomic weight. The descriptions of the physical and chemical properties of the elements and their compounds are very complete, and include, in addition, the mathematical treatment of many important examples of chemical equilibria, such as the Deacon's chlorine process, the variations in the vapour density of the halogens and their partition coefficients in various solvents. Special sections deal with the colloidal chemistry of the halogens and manganese.

The bibliography is remarkably full, there being more than fifteen hundred references for iodine and its derivatives alone. Manganese varies considerably in its habit of combination, and its compounds are arranged whenever possible under the headings of the various valencies of the metal, but reference is also made to its alloys, and to compounds in which the valency of the metal is undetermined.

G. T. M.

TEXTILES.

Textiles: a Handbook for the Student and the Consumer. By Mary S. Woolman and Ellen B. McGowan. Pp. xi+428. (New York: The Macmillan Co.; London: Macmillan and Co., Ltd., 1913.) Price 8*s.* 6*d.* net.

THIS book strikes a new note from an educational point of view, and represents a serious attempt to present a course of instruction to students who intend to make some branch of textile work their future business, or who are, or will be, the buyers of textiles for personal or household purposes. Whilst its strongest appeal is to students of the type mentioned, the matter is so arranged that it offers a mass of information to a wide range of readers who are out of touch with technical methods, and yet are seriously concerned and interested about the character of the textile materials they sell, purchase, or use. It fills the wide gap at present existing in the domestic economy course of instruction in our colleges and schools, and as it deals with practically all kinds of fibres and the textiles into which they are made, it presents in a most interesting manner a remarkably concise and exact description of the methods and machinery used for producing the various materials.

Unusually full details are given for distinguishing the constituents of any textile material, to detect frauds and to estimate value. The character of the various types of dyes and their use, together with notes on finishing and laundry work, add materially to the value of the book. The last three chapters deal with the hygiene of clothing, economic and social aspects, and a series of clothing budgets, these latter being unusually complete and valuable as guides in the laying out of money the clothing of families and individuals of various degrees of economic status.

The book represents a well-defined arrangement of accurate information gathered from a multitude of sources, chiefly of a highly technical nature, and rewritten in a simple and interesting manner with a very clear view to their utilisation by those who are, after all, the consumers of all that is produced by the vast number of our textile factories and workshops, and on whom these in-

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numerable industries depend for their existence. In addition to its value as a text-book on domestic economy, it is well worthy of a place in every textile-worker's library, and can be recommended as a reference book in the household.

Wm. Scott Taggart.

OUR BOOKSHELF.

The Reform of the Calendar. By Alexander Philip, Pp. xiii + 127. (London: Kegan Paul, Trench, Trübner and Co., Ltd., 1914.) Price 4*s.* 6*d.* net.

Mr. Philip reminds us that, apart from minor notes, we have discussed different aspects of calendar reform already in these columns (April 27 and October 26, 1911). The reader who looks for enthusiastic advocacy of some change and an account of the various proposals which have been put forward in recent years may be referred to this little book on the subject.

We wish to speak of Mr. Philip with some respect. Not that we regard calendar-making as a high order of achievement, although Mr. Philip's original scheme was probably as good as any other of its class, and certainly a great deal better than some. But he has also the broad mind which appreciates objections and prejudices, and he has been led to reduce his first proposal to a minimum adjustment of the days of the months. The week is left undisturbed, and his present scheme may be represented thus:—

Jan. 31	Feb. 30	Mar. 30	April 31	May 30	June 30 (31)
July 31	Aug. 30	Sept. 30	Oct. 31	Nov. 30	Dec. 31

Perhaps something might be said in favour of interchanging the second and fourth quarters so as to bring leap day (when it occurs) to the end of the year. But little can be seriously urged against a change which makes the months and quarters more equal and introduces an approximately rhythmic (? dactylic) arrangement. What is to be feared rather is that so slight an adjustment offers so small an advantage, in spite of Mr. Philip's glowing optimism, as to lack the necessary driving force for its adoption. Does there indeed exist a practical middle course between the Scylla of traditional prejudice and the Charybdis of triviality?

H. C. P.

Les Zoocécidies des Plantes d'Europe et du Bassin de la Méditeranée. By C. Houard. Tome Troisième. Supplément: 1909–1912. Pp. 1249–1560. (Paris: A. Hermann et Fils, 1913.) Price 10 francs.

The rapid progress of cecidology has led Prof. C. Houard to publish a supplement to his two indispensable volumes on the Animal Galls of Europe. This third volume deals with what has been done between 1909 and 1912, and it is astonishing to find a registration of 1,300 new galls, bringing up the total to 7,556! The author has exercised discretion in what he has included, and he makes an appeal to those interested in galls—and what naturalist is not?—to refrain from rushing into print with new discoveries until they have studied them for, say, two successive years! Everything has been done in the way of double entry and bibliography to make the catalogue serviceable, and both pagination and enumeration are in continuity with the previous volumes. There are 201 illustrations, and there is an appropriate frontispiece with photographs of Rübsaamen, Kieffer, Massalongo, and the late Prof. Giard.

The Principle of Relativity in the Light of the Philosophy of Science. By Paul Carus. Pp. 105. (London and Chicago: The Open Court Publishing Co., 1913.) Price 4*s.* net.

The author of this work has made up his mind in advance that the question of relativity is a philosophical problem. It is therefore necessary for him to dismiss contemptuously all the history of the purely physical principle technically known as "the principle of relativity." To say as he does that the Michelson-Morley experiment "assuredly has nothing to do with the principle of relativity" is simply to say that the principle is not what it is. The author refuses to call the principle a hypothesis, and asserts "that it is an *a priori* proposition, a postulate of pure thought which either holds good universally or has no validity whatever."

Whatever opinion may be held on this point, it is impossible to say that to the student of dynamics there is no difference in status between rotation and translation. If relativity is a requirement of pure thought, why cannot Newton's laws of motion be used equally well for two frames of reference, of which one is in rotational motion relative to the other? Are those laws wrong, or is pure thought irrelevant to dynamics? One aspect of the principle of relativity is that we do know whether it is convenient to think of a system as having no rotation. This is a matter of common experience. If pure thought denies it, it is clear that it is thinking about something other than the facts with which experiment deals.

Nature and the Idealist. Essays and Poems. By H. D. Shawcross. Pp. xii + 186. (London: Sampson Low, Marston and Co., Ltd. n.d.) Price 5*s.* net.

The late Mr. Shawcross died last year at the early age of twenty-nine. He was a newspaper journalist whose work had to be done in a busy Lancashire town, though all his instincts and his love for nature would have taken him into the country. His essays and poems reveal much of the struggle he continually had and their merit suggests that had he lived longer he would have become known as a poet and essayist to a wide circle of lovers of nature.

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